

IM Monthly Report



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Mississippi Public Service Commission Kemper IGCC Project

April, 2016

Executive Summary

URS Corporation (URS), later acquired by AECOM, was requested by the Mississippi Public Service Commission (MPSC) to provide Independent Monitoring services for the Kemper Integrated Gasification Combined Cycle (IGCC) Project located in Kemper County, MS. The scope of services includes monthly reporting by URS (AECOM) and its subcontractors, the Independent Monitor (IM), of the status and prudence of the on-going engineering, procurement, construction and startup activities performed by Mississippi Power Company (MPC or the Company), its parent Southern Company and subsidiary Southern Company Services (SCS), and its subcontractors on the project. This IM Monthly Report provides the results of this assessment for the reporting period of April, 2016, and review of the project status reported by MPC for the period from February, 2016 to April, 2016 (EPC Status Production Meeting Reports March 23 and April 20, 2016, February and March 2016 PSC Reports, and Kemper County IGCC Weekly Executive Summary, Metrics and Control Meeting Reports through April 26, 2016).

During this reporting period, the IM has conducted weekly status review meetings with MPSC staff. Several meetings, teleconferences and reviews were also conducted with MPC and SCS staff, as described below (refer to other Report Sections where referenced for more details):

- April, 2016 – Accounting audit of financial records from end of January, 2016 through end of February, 2016 held at MPC offices in Gulfport, MS (Appendix C).
- April, 2016 – Daily monitoring of on-going site construction and startup activities at the jobsite (Appendix E).
- April 11 and 12, 2016 – Review of project EPC status held at the jobsite (Appendix D).
- Week of April 11, 2016 – Review of gasifier startup activities held at the jobsite (Section 1.10).
- April 27, 2016 – Teleconference with MPC and SCS to discuss status of open RFI's (Appendix B).

Project Status through March, 2016 (Unless Noted Otherwise)

Engineering - The gasification island design performed by KBR, and the SCS design of the combined cycle island and the balance of plant (BOP) work, was 99% complete. All major Revision 0 design packages have been issued for construction. Remaining effort will be focused on resource pool and scope addition activities, including:

- Resource pool activities.
- Support to construction on key contracts – emergency notification, heat tracing, and fire protection systems.
- PSSR functional turnover punchlist items.
- Design Management of Change (MOC) process implementation and training.
- Design revisions from PHA, support requests, updated vendor information, and scope additions.
- Supporting Startup in turnover package checkouts.
- Addressing PSSR functional turnover punchlist items.

Procurement - All major equipment and commodity orders have been placed. Major equipment deliveries are complete. Remaining effort will be focused on final construction and startup needs including procurement of miscellaneous items as identified (scope additions). During April, one new award was issued for ash conditioner discharge slide gate valves, and seven vendor recommendations were accepted for replacement WSA catalyst, instrumentation on CTB to support initial integrated syngas operations, onsite technical support to commission eight (8) gasifier three-way valves, dust suppression system for dry ash silo unloading chute, replacement elements for candle filters, waste hauling of TSP waste, and startup janitorial services.

Construction (through April 24, 2016) – Plant construction is complete for the combined cycle unit, nitrogen plant, water plant, water storage pond, ash storage, buildings, lignite delivery facilities, piling and caissons, underground utilities, mass grading, concrete, structural steel, equipment, piping, instrumentation, cable tray, cable, terminations, conduit, tubing, and heat tracing. Plant work in progress includes equipment insulation (99% complete, about 13,000 SF remaining), and pipe insulation (98% complete, about 23,000 LF remaining), plus ongoing punchlist and scope addition activities. Overall plant construction was 99% complete (through March, 2016).

Transmission – Right of way acquisition and construction is complete for all 11 line segments and all 8 substations. MPC will continue to monitor transmission right of ways for any needed restoration and maintenance.

Pipelines – Right of way acquisition and construction is complete for all 3 pipelines. Long term sales or supply contracts have been signed with the City of Meridian (water), Denbury Resources Inc. (CO₂), Tellus (CO₂), Tennessee Gas Pipeline (NG), Air Liquide (nitrogen from onsite Air Separation Unit), and Martin Product Sales (sulfuric acid and ammonia by truck). CO₂ contracts specified CO₂ delivery dates have been exceeded. MPC will continue to monitor pipeline right of ways for any needed restoration and maintenance.

Liberty Mine - Current land control is 100% complete for the initial five year permit area. Construction activities are complete. Mine is operating and stockpiling lignite. Total actual spending for the mine development through March, 2016, including mine Allowance for Funds Used during Construction (AFUDC), was unchanged at \$232.2M, which is the forecast final cost.

Mississippi Economic Impact

IM has reported for each contract and purchase order whether MS bidders were involved, and if so, status and basis of the award decision (refer to Appendix F). Through March, 2016, contracts totaling \$1.937 billion have been awarded to MS companies, and total MS spending is \$1.922 billion (about 29% of the total, including uncapped costs). MS workforce contributed 556 construction jobs and 334 plant/mine jobs in March. A total of 556 MS Companies have provided construction, equipment, material or professional services for the Project.

Key Concerns

The following Project Execution related concerns have been reported with associated resolution status:

- Differential settlement and/or slope movement during initial loading of lignite stockpile in the storage dome - *Survey benchmarks will be monitored for settlement and slope stability during initial stockpile placement. IM suggests MPC consider development of mitigation plans in the event excessive settlements and/or slope movements are discovered, and staging of the initial placement of the lignite stockpile.*
- System testing has discovered numerous pressure leaks due primarily to inadequate installation, quality control, and quality assurance of flanged and welded connections (bolt torquing, gaskets, seals, pipe alignment, missing or inadequate welds) – *MPC is repairing the leaks when identified. Key concerns are noted below:*
 - Extraction Air Compressors – *pipng leaks on EAC-1 repaired; commissioning in progress.*
 - Syngas cooler leaks – *leak repairs and hydrotest completed on both Trains; IM has concerns with future leaks under operating conditions (evidence of additional cracks during boroscope, heat, fatigue stresses from the rappers).*
 - Coal mill loop leak rate exceeding maximum 150 SCF/minute – *leak testing and repairs will continue until the 150 SCF/min leak rate is achieved on all six trains (5 of 6 achieved).*
 - Coal dryer loop leak rate exceeding maximum 250 SCF/minute – *leak testing and repairs will continue until the 250 SCF/minute leak rate is achieved on all 6 trains (4 of 6 achieved).*
 - WSA Scrubber Quench Column body flange leaks – *temporary clamps installed; permanent repairs deferred.*
 - CCAD/CFAD piping leaks – *repairs in progress.*
- Train 2 venturi scrubber pumps cavitation issues – *continue to be reviewed during the lignite feed tests.*
- Venturi scrubber solids carryover issues (4 scrubbers/train) – *back flush system for the strainers will be installed on all 6 trains (1 of 6 complete); new piping is being added to maintain a constant flow to the plate cooler when the strainers are plugged to prevent the coolers from plugging (6 of 6 complete).*
- Recovered water filters plugging – *a temporary skid unit (coal fine removal system) was installed for testing; testing new type of recovered water candle filters on one train for higher solids content.*
- Gasifier A refractory repairs – *touching up the riser hard face refractory; additional refractory repairs and modifications of inserts/nozzles in the standpipe are underway; prepping for the thermal refractory dry out.*
- Gasifier B refractory repairs - *hard face refractory removal at the lower mixing zone in the Riser and one area at the J-leg is complete. Repairs (hand packing) to the thermal refractory are underway in the Riser along with sleeve extension work in the J-Leg and Standpipe. Hand packing around pressure taps and fluidization valves continues in the Standpipe.*

- Coal dryer rotary air lock valves plugging - *new internals with nitrogen cannons for the inlet and HP discharge valves, and larger inlet valve motors, will be installed on all 6 trains (1 of 6 complete).*
- Particulate Control Devices - *all the blow back pots on Train B ruptured during refractory cure and will be replaced; Train A blow back pots will also be replaced; fabrication of new pots is in progress. Cracks were detected after NDE at the flex seal seams (11 seams) in all 4 PCD's; repairs are in progress.*
- Elevators – *operational issues with the freight and personnel elevators are being addressed.*
- Dryer feed fan vibration issues – *expansion joint replacement complete; dorsal fin installation complete (6 of 6 complete).*
- Ash moisturizer system – *modifications in progress for all 4 trains, including new baffles and larger rotary feed motors.*
- Wastewater treatment pumps - *minimum water circulation could not be achieved on the Wastewater Ammonia Purifier Bottoms Pumps and the Wastewater Ammonia Stripper Reflux Pumps. Engineering is investigating this issue which may require larger motors.*

Contractor Hotline

MPC has established a toll free telephone number for contractors or others to provide observations of any concerns with improper activities associated with the project. Comments are collected by a third party and reported to MPC for follow up investigation and action. The IM is copied on all correspondence and will report status of all cases. There were no new concerns filed this reporting period (April, 2016).

A summary of the twenty five (25) claims received to date and their status, including corrective actions taken, is included in Appendix I.

Project Document Status

The overall status of the project document reviews are summarized in Appendix B to this monthly report. Most of the RFI's have been posted, reviewed and closed (30 open items remaining). Primary concerns noted by the engineering disciplines are summarized below:

- Scope Additions – *MPC has posted updated list through March 23, 2016 for approved items (\$111M) and through April 5, 2016 for pending items; weekly updates are being provided to the IM Site Team for all FCR's, OCR's and Resource Pool Listings.*
- PHA Action Items – *MPC has posted updated list through April 8, 2016 (157 open items of 3413 total items, 23 of these are high priority).*
- Vendor Recommendations – *5 new items were posted in April, there are 32 open items, mostly certified budget amounts (refer to Appendix F).*
- Process and Technology – *IM has additional questions on some of the posted responses (new RFI's were created); responses to 3 new items regarding the venturi scrubber system were reviewed with MPC and posted in April. IM has additional*

questions on the posted responses (new RFI's were created). One new RFI regarding coal handling was added in April.

Project Cost and Schedule

In the March 2016 PSC Report, MPC reported no change in forecast completion date in third quarter of 2016, and an increase in forecast capped cost of \$35 million to \$5.347 billion, including a decrease in base contingency of \$18.1 million to \$38.3 million and no change in Schedule Risk at \$35 million. Revenue writeoff for 1Q16 was reported to be \$53 million. Forecast uncapped costs increased by \$25.6 million in March to \$1.374 billion due primarily to increased AFUDC costs.

Total capped spending for the plant through March, 2016, with deduction for Department of Energy (DOE) funding, was \$5.058 billion. Overall plant EPC was 99% complete. Uncapped spending through March was \$1.241 billion.

As of April 24, 2016, the current working schedule indicates TOD of 9/1/16, which is a 295 day slip from the November 2014 rebaseline date, and a 19 day slip from the 3/29/16 report. The critical path is currently through Gasifier 'B' Refractory work, Return to Temperature on Gasifier 'B', Gasifier 'B' First Coal Feed Test, First Syngas Production Train 'B', Reliable/Clean Syngas Gasifier 'B', Borescopic inspection outage on Gas Turbine 'B', Gas Turbine 'A' Syngas Instrument installation outage, Testing and Tuning of CTs on Syngas, and TOD.

Key drivers on secondary path include:

- Ready for Ammonia Fill (1 day off the critical path) slipped 17 days due to delays in completing multiple Ammonia Storage PHA Action Items and finalizing the Emergency Action Plan. These must be complete before the team can sign the PSSR, place the Ammonia Flare in Service and declare Operational Readiness to fill the ammonia storage drums. PHA / PSSR action items are currently scheduled to complete by May 10.
- Gasifier A refractory work (15 days off critical path) slipped two days due to welding of studs and anchors taking longer than planned. This delay drove out the Reliable/Clean Syngas Available (Train A) milestone by two days, now scheduled to complete by August 03.
- Lignite Dryer 5 commissioning (17 days off the top path) for 1st Syngas. This path is driven by the need to have one dryer ready for First Syngas. Currently working to resolve the ongoing feeder issues before official Test Package commissioning will commence. The plan currently shows Lignite Dryer Train 5 being ready for First Syngas Production by June 4.

Overall project execution status was reviewed on April 12, 2016 at the jobsite. Refer to Appendix D for detailed meeting notes. Primary concern is additional schedule slippage and associated cost increases, and unknown startup and technology risks.

- Additional schedule slippage – MPC has reported a delay in COD to third quarter of 2016. MPC will continue to evaluate startup schedule and remaining risks, and has

included \$35 million for schedule risk in the March cost forecast, equivalent to September 30, 2016 COD; however, recent trends in startup progress (1% per month over the last six months) will have to improve to meet the forecasted COD. Schedule impact of recently discovered issues with the PCD's have yet to be quantified, schedule risks remain for completion of punchlists and PSSR action items, and on-going issues with the lignite preparation and ash removal systems have yet to be resolved. IM believes remaining process risks are being under estimated, and results of the latest Quantitative Risk Assessment indicate the possibility of high impact risk events affecting COD.

- Associated cost increases – While increases in the indirect project costs due to schedule delays are capped and therefore being absorbed by the MPC shareholders, the rate payers are also at risk for alternative power generation and AFUDC costs, to the extent these are allowed by the MPSC.
- Unknown startup and technology risks – key concerns include premature equipment failures, coal feed, ash removal, refractory reliability, overall plant process control integration, chemical product quality and off taker performance. Issues associated with several of these concerns (equipment failures, coal feed, ash removal, refractory reliability), have already been reported and are still being addressed.

Accounting

Topp McWhorter Harvey, PLLC (formerly known as Nicholson & Company, PLLC and hereinafter referred to as TMH) has completed the accounting audit of the special-purpose Historical Schedules of Capped and Uncapped Plant Costs of the Project for the historical project-to-date and month-to-date periods ended , and the examination of special-purpose Forecasted Schedules for the period beginning March 1, 2016, through the completion of the Project.

On April 26, 2016, the Company filed their March, 2016, monthly Form 8K with the SEC which increased its Capped Plant Cost Current View (forecast) for the Kemper IGCC Project to approximately \$5.347 billion, net of DOE grants and Cost Cap Exceptions. The Company's Monthly Status Report through March, 2016, increased its Current View (forecast) of Total Exemptions and Exceptions (Non-Capped Cost) by \$25.6 million to approximately \$1.374 billion.

In connection with the filing of its Kemper County Integrated Coal Gasification Combined Cycle Project Monthly Status Report through February 2016, the Company disclosed that it was continuing to conduct repairs and modifications to the refractory lining inside each of the gasifiers and to inspect and evaluate the need for additional refractory work, which could impact the projected in-service date and/or the related cost estimate for the Kemper IGCC. In connection with this evaluation, the Company continues to expect that the Kemper IGCC will be placed in service during the third quarter of 2016 and has revised its previous cost estimate,

which included projected costs through August 31, 2016, to include projected additional schedule costs through September 30, 2016.

Accordingly, the March PSC Report contains a further increase in the cost estimate subject to the cost cap for the Kemper IGCC of approximately \$35 million, representing the recognition of additional schedule costs through September 30, 2016. Since the filing of the Form 10-K, the Company has reported additional estimated costs subject to the cost cap in the aggregate amount of approximately \$18 million. The total estimated Kemper IGCC cost subject to the \$2.88 billion cost cap as of March 31, 2016 was approximately \$5.35 billion, net of the DOE Grants and excluding the Cost Cap Exceptions. The Company does not intend to seek rate recovery for any costs related to the construction of the Kemper IGCC that exceed the \$2.88 billion cost cap, net of the DOE Grants and excluding the Cost Cap Exceptions. As a result of this revised cost estimate, the Company recorded total pre-tax charges to income for the estimated probable losses on the Kemper IGCC of approximately \$53 million during the first quarter 2016.

Any extension of the in-service date beyond September 30, 2016 is currently estimated to result in additional base costs of approximately \$25 million to \$35 million per month, which includes maintaining necessary levels of start-up labor, materials, and fuel, as well as operational resources required to execute start-up and commissioning activities. However, additional costs may be required for remediation of any further equipment and/or design issues identified. Any extension of the in-service date with respect to the Kemper IGCC beyond September 30, 2016 would also increase costs for the Cost Cap Exceptions, which are not subject to the \$2.88 billion cost cap established by the Commission. These costs include AFUDC, which is currently estimated to total approximately \$14 million per month, as well as carrying costs and operating expenses on Kemper IGCC assets placed in service and consulting and legal fees of approximately \$2 million per month.

The analysis of the time needed to complete the start-up and commissioning activities for the Kemper IGCC will continue until the remaining Kemper IGCC assets are placed in service. Further cost increases and/or extensions of the in-service date may result from factors including, but not limited to, labor costs and productivity, adverse weather conditions, shortages and inconsistent quality of equipment, materials, and labor, contractor or supplier delay, non-performance under operating or other agreements, operational readiness, including specialized operator training and required site safety programs, unforeseen engineering or design problems, start-up activities for this first-of-a-kind technology (including major equipment failure and system integration), and/or operational performance (including additional costs to satisfy any operational parameters ultimately adopted by the Commission). In subsequent periods, any further changes in the estimated costs to complete construction and start-up of the Kemper IGCC subject to the \$2.88 billion cost cap, net of the DOE Grants and excluding the Cost Cap Exceptions, will be reflected in the Company's statements of income and these changes could be material. The ultimate outcome of this matter cannot be determined at this time.

On April 5, 2016, an amendment to the contract with the Department of Energy (DOE) was executed to provide an additional \$136.7 million in grant monies for the Kemper IGCC Project.

On April 8, 2016, the Company received the additional grant funding (\$136.7 million) from the DOE which is expected to be used to reduce future rate impacts for customers.

On February 25, 2016, Greenleaf C02 Solutions filed a notice of appeal in the Mississippi Supreme Court regarding the decision in Mississippi Public Service Commission docket 2015-UN-80. On February 29, 2016, the Company filed a Motion to Intervene as a party in the appeal. The appeal seeks to reverse the Commission's In-Service Asset Order and Temporary Rate Order awarding rate relief to the Company related to the Kemper Project. The Commission, as appellee, filed a Motion to Dismiss the Appeal, which has now been fully briefed and the parties are awaiting a ruling from the Court. The Appellants have not yet filed a Statement of Errors and a briefing schedule has not been established. The Company will vigorously defend the matter, and the final outcome of this matter cannot now be determined.

On March 2, 2016, Biloxi Freezing & Processing, Inc., Gulfside Casino Partnership and John Carlton Dean filed a Complaint against the Company in Harrison County Circuit Court. The Plaintiffs allege the Company violated the Mississippi Unfair Trade Practices Act, that the Company concealed, falsely represented and failed to fully disclose important facts concerning the cost and schedule of the Kemper Project and that the Company's breaches interfered with and destroyed economically advantageous relationships between the plaintiffs and their current and prospective business associates. The Plaintiffs seek unspecified actual damages and punitive damages as well as attorney's fees, costs and interest. Plaintiffs also seek an injunction to prevent any Kemper Project costs from being charged to customers through electric rates. On April 1, 2016, the Company filed a Notice of Removal to the United States District Court for the Southern District of Mississippi. On April 22, 2016 the Plaintiffs filed a Notice of Voluntary Dismissal Without Prejudice, dismissing the case in full.

On April 26, 2016, Biloxi Freezing & Processing, Inc., Gulfside Casino Partnership and John Carlton Dean filed a Complaint against Mississippi Power Company in Harrison County Circuit Court. The Plaintiffs allege MPC violated the Mississippi Unfair Trade Practices Act, that MPC concealed, falsely represented and failed to fully disclose important facts concerning the cost and schedule of the Kemper Project and that MPC's breaches interfered with and destroyed economically advantageous relationships between the plaintiffs and their current and prospective business associates. The Plaintiffs seek unspecified actual damages and punitive damages as well as attorney's fees, costs and interest. Plaintiffs also seek an injunction to prevent any Kemper Project costs from being charged to customers through electric rates. The complaint filed was nearly identical to the first complaint filed on March 2, 2016, with the exception of a few revisions that appear designed to disclaim any federal claims. Mississippi Power has not yet been served a copy of the complaint.

As reported in the Form 10Q for the first quarter ended March 31, 2016, Mississippi Power Company disclosed that the Securities Exchange Commission (SEC) is conducting a formal investigation of Southern Company and Mississippi Power Company concerning the estimated costs and expected in-service date of the Kemper IGCC Project. Southern Company and Mississippi Power Company believe the investigation is focused primarily on periods subsequent to 2010 and on accounting matters, disclosure controls and procedures, and

internal controls over financial reporting associated with the Kemper IGCC Project. Southern Company and Mississippi Power Company are cooperating fully with the SEC. The ultimate outcome of this matter cannot be determined at this time; however, it is not expected to have a material impact on the financial statements of Mississippi Power Company.

Discipline Summaries

Environmental / Permitting

CCE has completed its review of additional environmental/permitting documentation provided by MPC since October 2015. All documents provided by LF are summarized in this monthly report. The documents summarized in this monthly report include four (4) quarterly Mitigation Action Plan (MAP) monitoring reports, two (2) combined quarterly and annual MAP monitoring reports and one (1) Semi-Annual Rapid Bioassessment Monitoring Event Report.

There were no exceedances of Section 401 (Water Quality) permit conditions reported.

A complete listing of documents reviewed as of April 2016 for the IGCC Plant Site and Linear Facilities are shown in Table 1.3.1 and for the Liberty Mine in Table 1.3.2.

The IM's review of these documents has not identified any major concerns or issues. However, there will be additional monitoring reports (Mitigation Action Plan, Wetlands Mitigation and Water Quality and Macroinvertebrate Monitoring Reports) prepared by MPC and LF for the MDEQ and the Corps of Engineers. These documents and reports should be provided to and reviewed by the IM to insure that the permit requirements for the IGCC Plant Site and Linear Facilities and for the Liberty Mine continue to be met.

IM is monitoring status of approvals for the two (2) remaining plant permits:

- Title IV Acid Rain Permit – Application was submitted 10/13/11; MDEQ issued draft permit on 2/11/14; Public comments have been received.
- Title V Operating Air Permit Modification – Application was submitted on 8/22/14; MDEQ issued draft permit.

Process and Technology

Implementing site monitoring plan for gasifier startup by IM gasification technology specialist. Last site visit was conducted week of April 11 (see Section 1.10). Next visit will be conducted week of May 9. MPC responses to 13 RFI's were posted in February regarding gasifier refractory and other equipment issues in the gasifier coal preparation area. IM has additional questions on some of the posted responses (new RFI's were created), and 3 new RFI's regarding the venturi scrubber issues were reviewed with MPC and posted in April. IM has additional questions on the posted responses (new RFI's were created). One new RFI regarding coal handling was added in April (see Section 1.10 and Appendix B).

Lignite Delivery Facility

LDF construction is 100% complete. North LDF automatic gate installation has been completed and is operational. Coal is being maintained and monitored in silos 2, 5, and 6 for lignite coal runs. In addition, approximately 10,000 tons of coal is being maintained in the dome to support lignite testing this month. Mobile coal screening equipment continues to screen the coal at the coal storage pile before it is sent to the truck dump. Installing the above ground modular storage tank is underway at the LDF area to help handle the TSP and water generated during the flushing.

Procurement

Initial IM reviews of Vendor Recommendation Forms are complete. Most known key Contracts and Purchase Orders, including construction and Liberty Mine facilities, have been included, totaling about 500 items (excluding O&M Service Contracts, MS Tier II contractors, and Transmission). Refer to IM September 2014 Monthly Report (Appendix F) for the last update of completed reviews.

IM conducted closeout audit of procurement packages and prepared a listing of over 200 additional items not reviewed. From this list, the IM identified and requested about 75 items for review. MPC has begun posting the requested documents which are currently being reviewed. Refer to Appendix F for an update of the current reviews (5 items were posted in April, 32 open items remaining).

Site Activities (Plant metrics through April 17, 2016)

The following activities are **ahead of or on schedule** – Steel, Pipe, Instruments, Cable Tray, Tubing, Cable, Terminations, Conduit, Process Heat Tracing, and Freeze Protection Heat Tracing. The following activities are **behind schedule** with the percentage behind; include Equipment Insulation (2%), Pipe Insulation (4%), and Startup (12%).

Mechanical work has been proceeding in the following areas - Area 210 - Waste Water & Selexol Storage Area, Area 140 – Tankage Area, Area 150A/250A - Coal Prep Area, Area 120/220 – Gas Cleanup, Area 150/250 - Gasifier Area, Area 160 – Wet Sulfuric Acid Area, Area 230 – Selexol Area (North), Area 130 – Selexol Area (South), Area 105 – Train 1 Gas Clean Up Area, Area 110 – Compressor Area, Area 180 – CO₂ Compression and Dehydration Area, and Area 260 – Sulfuric Acid Recovery Area.

Electrical & Instrumentation work has been proceeding in the following areas - Area 105 – Train 1 Gas Clean Up Area, Area 110 – Compressor Area, Area 120/220 - Gas Cleanup Area, Area 130/ 230 – Selexol Area (South & North), Area 140 – Tankage Area, Area 150/250 - Gasifier 1 & 2, Area 150A/250B – Coal Feed 1 & 2, Area 160 – Wet Sulfuric Acid Area, Area 170 – Pipe rack, Area 180 – CO₂ Compression/Dehydration Area, Area 200 - Main Electrical Building, Area 210 - Waste Water Treatment Area, and Area 260 – Sulfuric Acid Recovery Area.

Gas Clean - Up (Areas 105, 120, and 220) – Crews are prepping train A WGS Reactors, COS Hydrolysis, and Mercury Adsorbers in preparation for catalyst loading this month. The catalyst was trucked in and staged in the area for loading the WGS Reactors first which began Monday (4/25). By the end of the month all 4 WGS COS Hydrolysis Reactors were loaded. Micron Filters FL-1010 and FL-2010 have been blinded and the new filter cartridges are on site with no installation scheduled at this time. COS Hydrolysis Bypass valve XV-14522 is on site, installation is pending. Crews continue to work on PSSR punch lists. As of Friday (4/22) all of train B WGS Reactors,

COS Hydrolysis Reactors, and Mercury Reactors have been loaded with catalyst and are under a nitrogen cap. Startup continues to ensure all punch list items on train B are complete in preparation for Gasifier B first syngas production.

Process Air (Area 110) – Siemens conducted additional pressure testing on EAC 1 (Extraction Air Compressor) compressor piping to determine the location of a leak. Two leaks were identified, a plug in the piping and a small valve. Both leaks that were found on the piping extremities for EAC 1 have been repaired. Pressure testing on the compressor side of EAC 1 was also completed with no leaks detected. Commissioning activities will begin the first week of May. Condensate that was found in PAC 2 and both Recycle Gas Compressors lube oil reservoirs is being filtered with a dehydration unit to remove the condensation. The source of the problem was faulty fill caps which have been replaced.

Selexol (Areas 130 and 230) – Startup crews continue to work on punch list and PSSR items in both areas. Turn over packages is complete on the CO₂ Flash Drums in area 130 with startup working on the CO₂ Absorbers. Activities continuing in both areas include hydroing vents and drains and insulating pumps and pump piping. The Cricket filters were tested in both areas successfully. AGR Sump Drum (DR-0057) was opened to remove sludge in the bottom, the pump was reinstalled, and the top of sump A0057 replaced. Handrails were then installed around the sump. Elliot is on site to begin commissioning the CO₂ Recycle Compressors beginning with train B (CO-2066) Saturday (4/23). Several attempts resulted in trips with the surge valve being removed for inspection. Maintenance personnel have installed steam hose connections at the Process Condensate Trim Heater (HX 2027) and Makeup Water Trim Heater (HX-0059) for testing the heaters after the catalyst has been loaded in the Gas Clean Up areas. Pump seal replacement on AGR Rich Solvent Pump PU-1060A, Loaded Solvent Pump PU-2366B, and Rich Solvent Pump PU-2060A is complete. The Flow Serve representative was on site for the seal replacements in train B and to demonstrate to the operators how to flush the remaining Loaded Solvent pumps in the area. Selexol loading on both trains is now schedule for mid-April pending train B 1st coal feed date.

Tankage (Area 140) – The Ammonia Storage Drums passed the in-service leak test and is holding 276 psi as part of TP-1031 (air/leak testing). The caustic system was filled with water early this month and the pumps run to begin the commissioning of this system. The 16 new threaded stainless steel flanges were installed and leak tested on the level bridles for the 4 Ammonia Storage Drums. Anhydrous Ammonia Rerun Pump PU-0054A was reinstalled with the alignment checked and verified.

Gasifier (Areas 150 and 250) – The following activities are in progress or complete:

- Gasifier B – After the full inspection of the Gasifier was completed it was decided that a 45' circumferential ring of hard face refractory would be tore out in the lower Riser mixing zone which includes a 3' to 5' section up to the field joint in the J-Leg. The hard face refractory tear out was competed and repairs (hand packing) to the thermal refractory are underway along with sleeve extension work in the J-Leg and Standpipe. In addition to the tear out all 1" nozzles/inserts in the Standpipe will be packed with a type of refractory to completely seal the gap around the nozzles/inserts. Hand packing around pressure taps and fluidization valves continues in the Standpipe.

- Gasifier A – Grit blasting was completed in the Standpipe with NDE on the studs also completed. Clean up followed with Thorpe then gunning in the all of the thermal refractory in the tear out zone with the exception of the lower barrel section of the Standpipe where the scaffolding was attached. When the scaffolding is removed Thorpe will tear out the hard face and thermal refractory in this area. After clean out in this area is complete the thermal refractory will be gunned in and Bolt Tech will begin the dry out. Bolt tech is on site prepping for the thermal refractory dry out now scheduled for May 8. Scaffolding was erected in the Riser for touching up the hard face refractory with detailing completed in the mixing zone.
- Train A and B Gasifiers Direct Diesel Injection valves were removed and sent out for seal replacement and repairs.
- Addressing minor leaks in train B CCAD, CFAD and PDAC lock hoppers continues.
- Train A and B PCD's – During the refractory cure in Gasifier B the thermocouple readings failed. During the inspection inside train B PCD's a number of the tops on the blow back pots were damaged. This damage was determined to have occurred during the back pulsing sequence. All the blow back pots were removed and will be replaced with a new design that Pall has submitted. The new design for the blow back pots will consist of a cone shaped top instead of the flat tops from the previous design. The damage is believed to have been caused by a poor design that did not account for the forces the pots would experience during operation. The last week of April Lavender arrived on site to complete their clearances to begin installing the new blow back pots which were expected to arrive April 29. After entering train B PCD's cracks were discovered in the flex seals. After NDE on the seam welds at the flex seal (11 seams) cracks were found in the first PCD that was inspected. Cracks have been identified in all 4 PCD's with Lavender to begin repairs.

Coal Prep (Areas 150A and 250A) – The following activities are in progress or complete:

- Due to high vibration reading on the dryer fans the vendor recommended that 6 larger dorsal fins be installed on train 6 dryer fan. The fan was monitored during the fan run with the system loaded (coal bed in the Fluid Bed Dryer). The vibration reading reduced dramatically during the test run. The larger dorsal fins are being installed on all the dryer fans. Installation is complete on trains 1, 2, 5, and 6. Crews are working on train 4 with train 3 to follow.
- Due to cracks detected in the welds and stress cracks in the lower multiclone hopper at the vibrating reinforcing pads on train 2 all the lower hoppers (4 per train) are being repaired. Repairs are complete on trains 1, 2, 4, and 5. Crews are working on train 6 with train 3 to follow.

- Train 5 dryer – Rotary Air Lock plugging issues this month in the inlet and outlet to the Fluid Bed Dryer has required new internals to be tried to increase the feed rate. Adding a nitrogen cannon connection in the side of the air lock valve to dislodge any coal stuck in the vanes is also being tried. At the end of the month a 6 vanes, open end, stainless steel Rotary Air Lock internal from ACS Valve in Canada was received. The casing was sent out to be drilled and taped for the nitrogen cannon connection and then installed. This train will have the first complete setup with a 6 vane Inlet Rotary Air Lock with the upper nitrogen cannon connection and 8 vane open end internal in the HP discharge Rotary Air Lock. In addition the Inlet Rotary Air Lock motor was changed out from a 7 HP motor to a 10 HP totally enclosed motor. If this is successful then the other 5 trains will have the motors increased to 10 HP. The lignite run started off slow with issues on “D” Ash Moisturizer but later as the consistency of the coal improved at the Ash Moisturizer the feed rate was increased to 50,000 lb’s/hr then 70,000 lb’s/hr and finally increased to 125,000 lb’s/hr for a couple of continuous uninterrupted 3 hour runs.
- Train 6 dryer – Crews are installing the same set up on this train as train 5 which includes a 6 vanes, open end, stainless steel Rotary Air Lock, adding a nitrogen cannon connection in the side of the air lock valve to dislodge any coal stuck in the vanes, and an 8 vane internal in the HP Discharge Rotary Air Lock for lignite test run the first week of May.
- Acceptable dryer fan leak rate is 250 SCFM’s and acceptable mill fan leak rate is 150 SCFM’s. (4 of 6 dryers completed, trains 1, 2, 5, and 6) and (5 of 6 mills completed, trains 1, 2, 3, 5, and 6)
- The permanent tops for train 6 strainers were received and installed with back flushing piping continuing on the remaining trains for the Venturi Scrubber strainers. All permanent back flushing piping has been installed complete for the 6 plate coolers.
- A new set of filters for one of the 3 Recovered Water Candle Filters (FL-0001A/B/C) from Pall was installed and is being tested with water stored in Frac Tanks from previous lignite runs. This water contains sub-micron coal particles that are being tested with the new set of filter elements. No results have been communicated so far this week.
- Ash Moisturizer modifications were completed in Ash Moisturizers A and D and are being completed in B and C now. The 2 HP motor for the Rotary Feeder on Ash Moisturizer D was replaced with a 3 HP motor. If this new upsized motor is successful then the other 3 motors will be replaced with 3 HP motors.
- The LP Vent Gas Compressor was received and installed this month. Crews are fabricating a new pipe spool on the inlet of the compressor.

Wet Acid (Area 160) – The Beltran vendor was on site earlier this month to complete the final inspection on the electrostatic precipitator. One section of rods was found out of alignment and was realigned. Three rods were found bent and had to be extracted.

These rods were straightened on site and reinstalled. Filling and circulation water in the Scrubber to test the spray nozzles for final commissioning was completed Friday (4/1). Issues with the actuator PDV-08117 not operating properly on the 96" damper for the Combustor discharge required the O-ring to be replaced and function tested. All three fans (BL-70, BL-71, and BL-72) were then run for leak testing. Leak testing was completed on the Quench Column where the brackets were installed to seal the gap in the large gasket and at the top of the Condenser where the flanged tops were reinstalled after the inspection and the broken glass tubes were replaced. Loading packing in the Scrubber began Monday (4/18) along with crews beginning the work on the expansion joint misalignment in the 100" duct. The duct repair and loading packing in the Scrubber Column was completed before the end of the month. Alignment and expansion joint issues on the Scrubber Water pumps (PU-073A – E) required one of the 24" lined pipe tees on header to be removed and sent off for repair. Inspection is underway inside the SO₂ Converter for the upcoming catalyst loading.

Pipe Rack & BOP (Area 170) – Construction is complete.

CO₂ Compression / Dehydration (Areas 180 and 260) – Insulating continues on the Refrigeration piping, Refrigerant Subcooler piping, and Dehydration piping this month. Hydrovacating the standing water in the 10" CO₂ underground pipe to the metering station continues to be removed before dry out can begin. Due to misalignment train B CO₂ Compressor motor was removed so machining on the sole plates could be performed. Machining the sole plates for Train B CO₂ Compressor motor was completed Monday (4/18) with a few items left to complete before the motor was lifted and reset the last week of April. All eight Refrigeration Compressors were run successfully for 2 minutes with nitrogen this month. Helium leak testing at all pipe connections is underway.

Flare (Area 190) – Hydrolazing to remove around 70 feet of sand in the 10" line to train A HP Flare (this is the sand that collected in the pipe due to a normally closed valve that was left open during the sand fill in train a Gasifier) is complete. Removing the hoses and closing the pipe is underway.

Waste Water Treatment (Area 210) – Clearances were finalized for leak testing the Wastewater Ammonia Stripper and Wastewater Ammonia Stripper Reboiler for test package TP-1030. All leaks in the Sour Water system have been repaired for cold water circulation to begin. The new 8" vacuum valve was installed on top of the Wastewater Storage Tank. The blinds were removed so filling the tank could begin. This water will be used as part of the cold circulation testing on the sour water system, excluding the Ammonia pumps. The Wastewater Storage Tank was filled with water for a successful pump and cold water circulation test Tuesday (4/26). Both Wastewater Bottoms Pumps were run and water circulated for testing on the Wastewater Drum Wednesday (4/27). Due to the success of this water circulation the water circulation loop will be expanded in the Sour Water area. Working PSSR and punch list items in the Sour Water area continues. Crews are installing temporary Selexol piping for refilling the Selexol Tank TK 0060 after the AGR system is filled. The access platforms to the control valves PV-04511 & PV-04725 is near completion.

Acid Storage Tanks and Off Spec Acid Tank (Area 260) – Construction is complete.

Nitrogen Plant (Area 260) – The nitrogen plant continues to support the plant and startup this month.

Combined Cycle HRSG's and CT's (Areas 510, 520, 530, and 540) – Construction is complete.

Steam Turbine & Auxiliary Boiler Area (Area 550) – Construction is complete.

Water Treatment (Area 570) – Construction is complete.

Cooling Towers (Areas 580 and 590) – Construction is complete.

Main Gate Security (Area 700) – Construction is complete.

Sewer Plant and Ash Storage Pond (Area 800) – Evaporating an average of 4” of water from the above ground modular storage tanks daily continues. Hauling water containing TSP that is stored in Acid Storage Tank TK-072A for disposal is underway.

Process Water Reservoir (Area 900) – Construction is complete.

Project Safety Summary: Since the beginning of the project, there has been 83 reportable incidents at the site with 38,643,041 man hours worked. This year, the site has worked 1,601,384 man hours with 1 reportable incident. The project RIR stands at 0.12 for the year and 0.43 for the Project Total to Date.

Schedule

The construction schedule for remaining base scope dated 5/1/16, and the schedule for scope additions dated 5/1/16, are included in Appendix E.

Key metrics reported through April 24 are summarized below:

- Terminations installation was completed in April.
- Equipment insulation installation was 1% behind plan overall. Work in the Gasifier will resume as Startup activity allows. Gasifier quantities were rescheduled to reflect availability of the work. The planned quantity in Gas Cleanup consists of pump insulation, equipment metal guards, and manway insulation. Manway insulation and metal guard installation impeded pending completion of Startup activity.
- Pipe insulation installation was 1% behind plan overall. Gasifier progress was delayed due to Startup activity and is expected to resume in June. Not reflected in the planned or actual quantities is additional insulation rework to reinstall insulation that had been removed for Startup activity.
- Construction to Startup punchlist summary for base scope (excluding scope additions) shows a reduction in remaining open items from 406 on March 27 to 384 on April 24.
- Overall, turnover packages from construction to startup are on schedule as 965 are received out of a plan of 965 to date (99% complete, 3 of 968 packages remaining). The only remaining packages are Potable Water that will be turned over on April 25, Gasifier Structure Personnel Elevator that will be turned over on May 6, and Cathodic Protection that will be turned over on May 6.

Startup

- At the end of March, total startup employee staffing was at 279, including 24 SCS startup employees, 248 supplemental, and 7 OPCO's staff; plus 386 supplemental craft support and 45 I&C field technicians (grand total of 710 – an increase of 10 from February).
- Through April 24, startup progress was 88.4% complete overall (1% increase from March 27) vs. planned 100%.
 - 927 TOP's have been commissioned out of a total of 968 (96% complete). Of the 41 behind plan, 14 are complete for commissioning with the exception of completing all I/O loop checks. 32% (313 of 968) have been turned over from startup to operations (mostly CC and associated BOP).
 - Startup test packages are 63% complete (60 of 96 complete). Of the 36 late test packages, 13 are currently in progress.
 - Overall, I/O checks are <1% behind plan (99% complete, 181 of 31,433 remaining). Scope additions will potentially continue to change the total point count over the coming weeks as loops are added or deleted. These changes will be incorporated into the plan. The majority of the remaining loops are not available to be checked due to needed design, construction, or release from clearance. A plan is in place to address and expedite the availability of this I/O. There is no impact to test package execution or milestone completion.
 - Startup to Operations punchlist summary for base scope (excluding scope additions) shows a decrease in remaining open items from 17,338 on March 27 to 15,197 on April 24 (2,465 of these are high priority).
 - Interior coating application on Sour Water Tank was completed and is being cured.
 - Wet Sulfuric Acid (WSA) Electrostatic Precipitator (ESP) checkout was successfully completed.
 - WSA PSSR sign off completed.
 - Began catalyst loading in WGS 'B' Train.
 - 7 Of 8 Ammonia Refrigeration Compressors successfully run in.
 - All TOP walkdowns have been completed.
 - Ammonia Flare PSSR sign off completed.
 - Catalyst loading completed for Train 'B' WGS Reactors.
 - Gasifier 'A' riser side refractory casting completed and forms being removed.
 - Completed catalyst loading for Train 'A' WGS 1st Stage and Train 'B' Mercury Adsorbers.
 - Completed WSA expansion joint modifications and scrubber packing.

Operations and Maintenance

Overall 258 of the planned 309 permanent employees are on staff (315 of 309 including contractors). Current supplemental contract staff will be considered for remaining 51 permanent positions.

Process Safety Management (PSM) program development:

- GT board operator training complete – can provide trained operators to support any test package.
- Overall Risk Management Plan (RMP) is complete and will be filed with EPA prior to implementation – RMP for HRSG ammonia system was approved by EPA.
- There are 14 PSM elements – 10 of the 14 are complete (ready for chemicals).
- Executing PSM consultants' recommendations for the remaining 4 elements - Process Hazard Analyses, Pre-Startup Safety Review, Process Safety Information, and Mechanical Integrity:
 1. Process Hazard Analysis - all eight PHA's requiring updates are complete, working through recommendations (95% complete). MPC has posted updated PHA Action List through April 8, 2016 (157 open items of 3413 total items; 23 of these are high priority).
 2. Pre-Startup Safety Reviews - Initial Equipment Walkdowns using PSSR checklist are complete for all 16 required systems (346 TOPs walked down out of 346, 100% complete). PSSR durations are a concern (included in monthly schedule risk assessments). As of 4/24/16, there are 1,382 high priority PSSR punchlist items remaining open (progress improving as 46% completed in April), and 47 high priority action items remaining open (progress improving as 53% completed in April).
 3. Process Safety Information - As of 2/28/16, overall documentation was 92% complete and high priority documentation was 90% complete (**more recent update not available**).
 4. Mechanical Integrity – RAM analysis management review is complete, working with vendor on comments. Final report to be completed in 2 to 3 months.

Land

IM Review of Documents and Purchases from the Kemper County Courthouse, Lauderdale County Courthouse and Update on the Lawsuit Concerning the Kemper IGCC Power Plant Site and Liberty Mine, Kemper County, Mississippi

In the March 2016 report, the IM reported on three new land purchases with one purchase covering land in Kemper and Lauderdale Counties, MS., discussed a spreadsheet covering recent Kemper County, MS. land purchases and the status of the Kemper County lawsuit.

In the April 2016 report the IM will discuss that there were no new purchases of mining land in Kemper and Lauderdale Counties located during an April 26, 2016 visit to the Kemper County and Lauderdale County Chancery Clerks' Office, a spreadsheet on land purchases in Lauderdale County and developments in the Kemper County lawsuit.

The IM has reviewed information about the purchase of new mining land for the Kemper County IGCC Power Plant and Liberty Mine, the purchase of mining land in Lauderdale County set out in Exhibit "A" and the status of the Kemper lawsuit and determined the following:

- Mississippi Power Company (MPC) purchased no new tracts of coal mining land in Kemper or Lauderdale Counties, MS in the last month. The IM will visit the courthouses again next month to determine if any new land purchases are made.
- MPC has purchased [REDACTED] acres, more or less, in Lauderdale County for over [REDACTED] dollars or an average of [REDACTED] an acre since December 2013. The [REDACTED] acres had an appraised value of [REDACTED] or [REDACTED] an acre for land, structures and timber. The purchases in Lauderdale County were mostly small tracts and included many houses which partially accounts for the higher per acre value.
- Since 2012 MPC has purchased a total of [REDACTED] acres, more or less, of land for over [REDACTED] dollars or an average of [REDACTED] per acre. The IM has only reviewed the appraisals for some of these purchases of [REDACTED] acres, the IM reviewed appraisals for [REDACTED] acres with an appraised value of [REDACTED] per acre.
- The parties to the Barham versus Mississippi Power Company lawsuit are waiting for a decision from the Judge dealing with the Summary Judgment Motions filed by both parties and argued at a court hearing held August 27, 2015 in the Chancery Court in Philadelphia, MS.